



HAZARDOUS EFFECTS OF CLIMATE CHANGE ON HUMANITY WITH REFERENCE TO WAYANAD

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ABSTRACT

The research paper on 'Hazardous Effects of climate Change on Humanity with Reference to Wayanad reveals the recent landslide and its alarming effects on the people of Wayanad. The disaster visualized in the Wayanad District of Kerala is the first such recorded event in the history of Kerala. Multiple landslides flattened three villages in Kerala's Wayanad district's Vythiri Taluk on 30th July, 2024. Several landslides happened in Meppadi Panchayath's Punchirimattam, Mundakkai, Chooralmala, Vallerimala, and Attamala. The landslides and fatalities have been linked to deforestation, seismic sensitivity, shoddy building construction, and global warming. A hillside collapsed due to heavy rains and buried these villages under debris. Incessant rain triggered landslips in the Punchirimattam forest under the South Wayanad forest division and hit hundreds of families in the Chooralmala, Attamala and Mundakkai areas. The Wayanad disaster has been referred to as an anthropogenic tragedy by renowned ecologist Madhav Gadgil, who served as the Chairman from the Western Ghats Ecology Expert Panel.

KEYWORDS: Disaster, Landslide, Deforestation, Seismic Sensitivity, Global Warming, Anthropogenic

INTRODUCTION

This research paper is an attempt to highlight the recent devastating landslide happened in Wayanad that flattened three villages in the Kerala's highlands Wayanad district's Vythiri taluk on July 30, 2024. A sequence of landslides known as the Wayanad landslides took place at Punchirimattam, Mundakkai, among Chooralmala which were known for their scenic landscapes and waterfalls.

The origin of the landslide has been identified as a valley above Punchirimattam near the Mundakkai region. Disturbances in the natural stability of a slope cause landslides¹. The landslides and deaths have been linked to deforestation, seismic sensitivity, shoddy building construction, and global warming. The fall of a hillside due to heavy rains and buried these villages under debris. Incessant rain triggered landslips in the Punchirimattam forest under the South Wayanad forest division and hit hundreds of families in the Chooralmala, Attamala and Mundakkai areas.

Deforestation exposes soils to erosion, evaporation, wind, and sunlight. The quick leaching of vital mineral nutrients lowers soil fertility. Earthquakes and earth vibrations can either cause or affect seismic sensitivity. The chairman from the Western Ghats Ecology Expert Panel, Madhav Gadgil, emphasized that the region was categorized into three ecological sensitivity levels in the panel's report, with the disaster-affected areas being designated as extremely sensitive. Therefore, there shouldn't have been any development in these extremely delicate areas². Poor building construction lead to a collapse of the houses and resorts at natural disasters. Increased flooding is one effect of the significant changes in weather patterns and natural cycles brought about by global warming. Anthropogenic activities, particularly the burning of fossil fuels, are the primary cause of the current increase in global temperature. The effects

of climate change on the environment have grown more significant. Many species are going extinct in mountains due to rapid environmental change. It is beyond the power of a single nation to remedy the problem it faces³. Pollutants from a wide range of human activities are altering the earth's atmosphere at a rate never seen before⁴.

Climate scientist announced Wayanad landslides linked to warming of Arabian sea that allowed formation of deep cloud system leading to extremely heavy rainfall in shorter period and increasing the possibility of landslides. Scientists have noticed a trend of very deep cloud systems developing over the south east Arabian sea making it warmer and causing the atmosphere above this region to become thermodynamically unstable⁵.

Hazard so disaster are not interchangeable terms they should not be utilized interchangeably. Disasters can also be defined as transient occurrences brought on by man-made or natural risks that significantly impair a community's or society's ability to function⁶. According to UNESCO, catastrophes are the results or repercussions of natural risks. People can cause disasters, thus they may not be completely natural. This is predicated on the idea that certain human behaviors and pursuits may raise the degree of risk exposure. For instance, excessive development on hillsides and severe deforestation may result in more severe flooding⁷. The poorest members of a community are typically the ones who live in dangerous places and are most at risk from natural disasters.

Climate change can encourage unprecedented weather, precipitating natural disasters of magnitudes that may amaze local people. Heavy rains during the South West Monsoon and landslides are a recurring phenomenon. But deadly landslides are new. This time heavy rains triggered multiple landslides

that have killed 420 people and laid waste to a few villages.

Wayanad region is a tourist destination and its hotspots allures tourists from all over the world. The Chaliyar river springs from an altitude of around 2 KM and flows down towards Vellaramala bringing fast waters that also sweep relatively more sediment downstream. The rains this year further increased the rivers volume and force which swept up debris and deposited it in the villages settled on less steep land where many of the deaths have been reported. However, the tragedy is made worse considering the fact that the Chaliyar lost a large portion of its upstream plant cover due to torrential rainfall in 2020, which left more boulders in humus susceptible to displacement.

Global warming has already affected our monsoon patterns and climate. Instances of very heavy rains every year have gone up. Spells of moderate rain are going down. This changing trend of the monsoon has made our region more vulnerable to disasters and landslides⁸. The geographical peculiarities of landslide prone Wayanad has been evident for years. They also feature prominently on landslide risk maps. The root cause of the landslide's Climate change must therefore share this lethal repetition.⁹ The persistent problem is a complete absence of disaster preparedness and advance notice. Landslides are more common in ecologically fragile areas. The monsoons have been producing more short bursts of intense rain resulting in some soil types becoming easier to dislodge. However, monocropping, construction, linear infrastructure development, and quarrying have all weakened eco systems' capacity to adapt to shifting environmental conditions.

The first landslide reached Chooralmala at 2.00am and the second came after 4.00am. The landslide took away the people in their sleep and brought their severely injured bodies to the Chaliyar downstream at Munderi. Many bodies went through the steep waterfalls of Soochippara, Kanthanppara, and Meenmutty before reaching Munderi near Nilambur. It dropped down a bridge connecting Chooralmala with Mundakkai and Attamala, the Shiva temple of Chooralmala, a mosque at Mundakkai, houses, business establishments and a few resorts. As of the latest information about Wayanad landslide, over 420 people were confirmed dead with an additional 240 missing. This made it One of Kerala's deadliest landslides ever. The Vellarimala Government Vocational Higher Secondary School (GVHSS) in Chooralmala village was completely engulfed in the landslide. At least 20 of its students were confirmed dead. Three villages Punchirimattam, Mundakkai and Chooralmala were completely destroyed, other villages like Attamala were partially affected, hundreds of families were displaced. Infrastructure development in affected areas include extensive damage of eight Kilometers of power lines, with two transformers washed away and three others damaged, around 350 families lost electricity. Relief and rebuilding efforts include setting up temporary clinics, mobile mortuaries and forty five relief camps in Wayanad.

The state government must restore denuded flora and rehabilitate people in these areas to ensure they have other opportunities for their welfare. Kerala should reject engineering projects in ecologically vulnerable areas and its environs, as advised for

the Western Ghats Ecology Expert Panel. Additionally, it should establish along with equip staff and empower expert committees to discuss the viability of other projects in these areas. The state government has announced plans for a Township for the landslide survivors.

Environmental factors such as unregulated construction and deforestation in the Western Ghats exacerbated the disaster. Experts have warned against unsustainable land use and encroachments in Ecologically Sensitive Areas (ESA)¹⁰. Following this catastrophic Wayanad landslide, the union government has reissued for the sixth time a draft notification classifying parts of Western Ghats in Kerala as ecologically sensitive areas. This would impose restrictions on economic activities such as quarrying, mining, and large infrastructure development in these areas. Once the ESA notification is finalised, it will invite the ESA's total prohibition on mining, quarrying, and sand mining, together with the requirement that all current mines be phased down within five years. Existing plant expansions and new thermal power projects will not be permitted. Every new Red category business that falls under the purview of the Central Pollution Control Board will be outlawed. Hydro power projects conforming to certain conditions will be allowed. A separate monitoring mechanism will be established for economic activity in the region.

From these details it is vividly clear that Both the general public and policymakers are becoming more conscious of the fact that environmental degradation and its detrimental effects on the economy and society are becoming dramatically worse. To prevent an environmental disaster, immediate action is required at all levels-regional, national, along with international.

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